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Real-time Transport for QUIC

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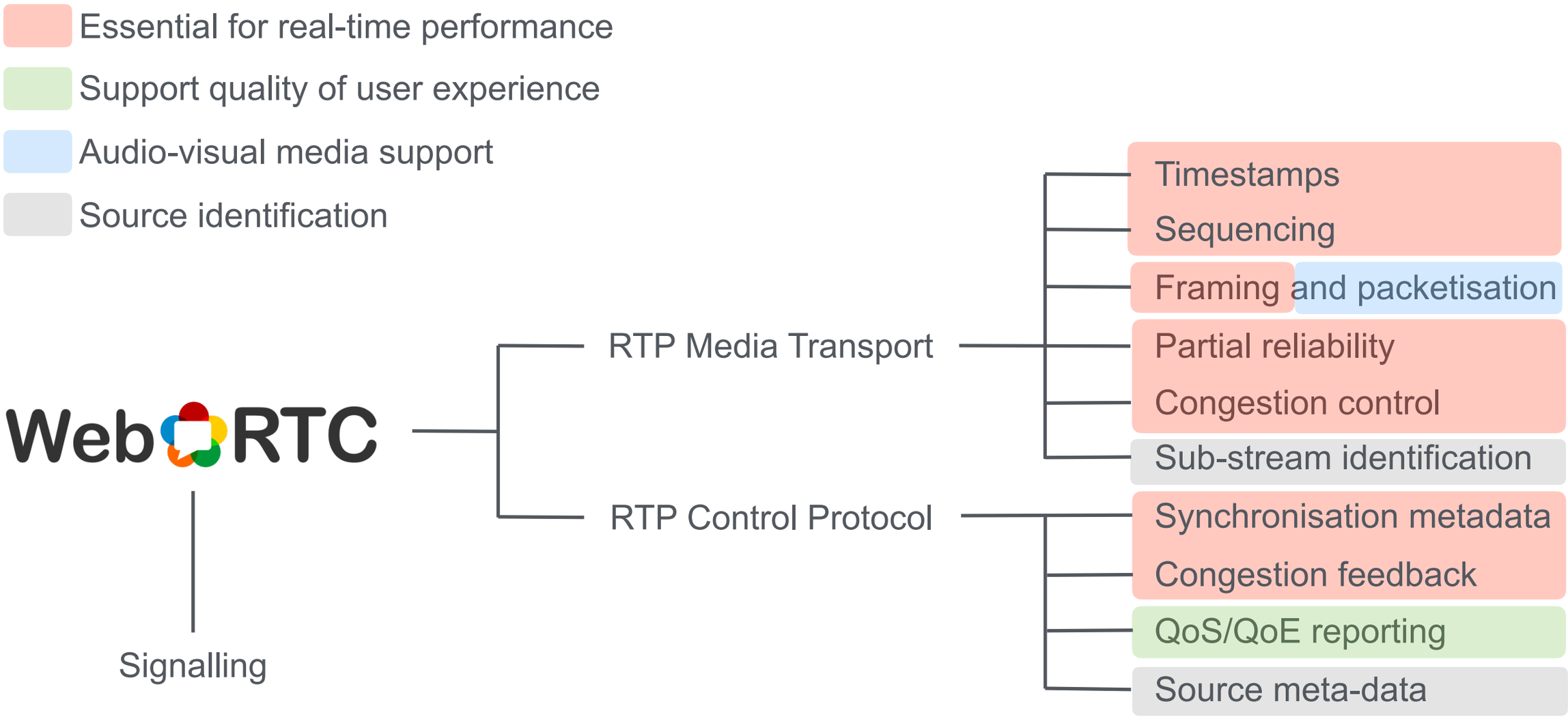
Potential Use Cases

- Candidate applications:
  - Interactive video
  - Interactive voice
  - Low-latency streaming video
  - Streaming sensor data
  - AR/VR/immersive
  - Gaming?

- Key requirements:
  - Prefer timeliness over reliability → unreliable or partially reliable
  - Need to reconstruct timing
  - Need to support and synchronise multiple sub-flows
  - Media-aware congestion control beneficial, but not essential

Real-time Media Transport – Motivating Example



Motivating Real-time Extensions for QUIC

Essential for real-time performance

None of this is WebRTC specific

All could be re-invented by each real-time application, running over a QUIC datagram layer

- Timestamps
- Sequencing
- Framing
- Partial reliability
- Congestion control
- Sub-stream identification
- Synchronisation metadata
- Congestion feedback

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Much is well-aligned with the requirements of a congestion controlled datagram layer

Relatively small changes to support real-time → avoid needless re-invention of the wheel; support application innovation

We're moving beyond TCP for reliable media – let's also move beyond UDP for real-time

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Discussion

Are general purpose QUIC extensions in this space desirable?

How should they be developed?

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